

The Use of Arizona BRFSS Data to Estimate Health Disparities in Hispanics

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Objective

To estimate disparities in the prevalence of diabetes and associated risk factors between Hispanics and non-Hispanics living in Arizona.

Background

Hispanics in Arizona (AZ) had a diabetes related mortality rate of 31.50 per 100,000 in 1990 and 42.90 per 100,000 in 2001¹. During the same time period the diabetes related mortality rates for other ethnic and racial groups in Arizona were much smaller, ranging from 15.60 per 100,000 to 19.90 per 100,000. Epidemiologic surveys in U.S.-Mexico border communities^{2,3,4} reported rates of diabetes to be between 9-16% (related to age and country of residence) in Hispanics and 5-8% in non-Hispanics. Additionally, the surveys also found high rates (26-36%) of obesity among Hispanics in border communities.

Method

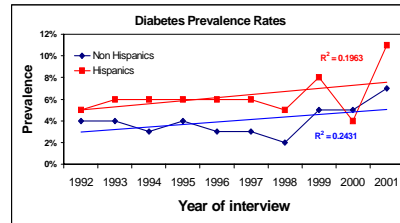
The CDC BRFSS is a random digit dialed, stratified, multistage household survey of adults 18 years and older. The BRFSS sampling strategy includes definitions of primary sampling units, strata, and weights based on differential sampling rates and post-stratification factors provided by the CDC. Ten years of the AZ BRFSS surveys (1992-2001) were combined and analyzed to estimate the prevalence of diabetes, its associated risk factors (obesity, physical activity) and health care access by Hispanic ethnicity and residence. "Diabetes" is the response to the question of whether the respondent had been told by a health care provider that they had diabetes. Particular attention was given to those living in counties on the Arizona-Mexico border.

Results

The age and sex-adjusted odds ratios for self-reported good or excellent health, for diabetes, obesity, and physical activity level were significantly worse among Hispanics than non-Hispanics. Individuals in border counties as a whole were less likely to report excellent or good health, and less likely to engage in the recommended levels of physical activity.

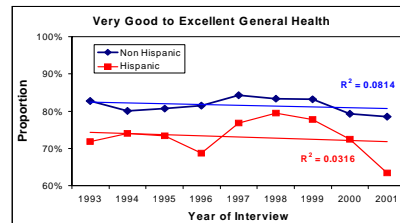
Demographics

- AZ BRFSS respondents, 1992- 2001= 20,409
- Representative of Census by age & gender
- Somewhat more employed in BRFSS (cf Census)
- Female – 53%
- Ages 18-39 – 63%
- All White – 84%
- Hispanic – 15.4%
- Hispanics are significantly younger, more likely to have dropped out of high school, less likely to have had some college education, more likely to be unemployed, and to have a household income less than \$15,000 than non-Hispanics.

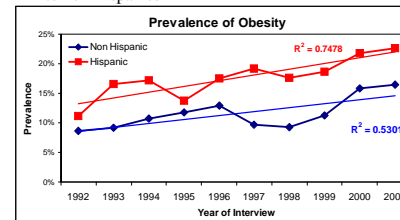


➤ Hispanics have a higher prevalence of diabetes than non Hispanics

➤ Diabetes rates are rising

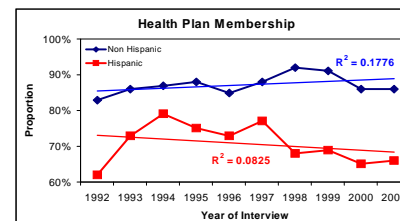


➤ Hispanics were less likely to consider their general health as being "excellent" or "very good", compared to non Hispanics



➤ Hispanics have a higher prevalence of obesity than non Hispanics

➤ Obesity rates are rising over the past decade



➤ Hispanics are less likely to report having a health plan, compared to non Hispanics

➤ The gap in health plan coverage between Hispanics and non Hispanics appear to be increasing

Significant Prevalence Rates by Hispanicity

Condition	Level	BRFSS 1992-2001		CDC 2001			
		n	%	n	%		
Diabetes	Yes	210	6	730	4	5	6
	General Health	Very good/ Excellent	1341	73	9356	83	82
Obese (BMI ≥ 30)	Yes	537	18	2028	12	12	19
	Overweight (BMI ≥ 25)	Yes	1577	55	7029	42	45

Significant Rate Differences by Hispanicity Behavioral & Health Care Factors AZ BRFSS 1992-2001

Condition	Level	Hispanic		Non-Hisp		Total	
		#	%	#	%	#	%
Ever smoker	Yes	994	30	7963	44	42	
Physical activity	Recommended level	1081	23	4301	35	25	
Health plan	Yes	2229	66	15170	88	84	
Medical costs preventive care	Yes	638	25	2251	15	17	
Check up within 2 years	Yes	2107	83	12301	86	85	

Relative Odds of Selected Risk Factors for Hispanics Multiple Logistic Regression Results

	Diabetes*	Overweight	Physical Activity	General Health
Odds Ratio	2.43	1.68	0.46	0.36
95% CI	1.73 - 3.40	1.41 - 1.99	0.39 - 0.52	0.29 - 0.46

nb Non-Hispanics as referent group; Adjusted for significant covariates of age, gender, & year, * Also adjusted for overweight (yes/no); Unemployment or High School Dropout (yes/no) also significant and adjusted for in some models

References

1. Mrela, C. Arizona Health Status and Vital Statistics 2000. Arizona Department of Health Services: Phoenix, Arizona.
2. Flood T, Lebowitz MD, De Zapien J, Staten L, Rosales C. Douglas Community Health Survey: Diabetes and Health Care in Arizona on the Mexican Border. Arizona Department of Health Services, Phoenix: Arizona 1999.
3. Quigley HA, West SK, Rodriguez J, et al. The Prevalence of Glaucoma in a population-based study of Hispanic subjects: Proyecto Ver. Arch Ophthalmol. 2001; 119: 1819-26.
4. Lebowitz MD, Rogan S, O'Rourke MK, Gomez A, et al. Survey of Schoolchildren's Parents in Southwest Yuma County. Rosales, C. Thesis: Survey of Diabetes in Agua Prieta, Sonora. Unpublished documents. University of Arizona, Tucson, Arizona.

Discussion

Combining ten years of the BRFSS:

1. provides a representative sample of Hispanics in households with telephones.
2. is insufficient for community estimates for Hispanics

The aggregated data show that Hispanics have poorer perceived health and are more likely to show risk factors:

1. Hispanics are more likely to report having diabetes
 - a. The odds ratio for diabetes is 2.43
2. Hispanics have a significantly higher adjusted rate of obesity
 - a. The odds ratio for being overweight is 1.68
3. Hispanics are less likely to engage in physical activity
4. Hispanics report poorer perceived general health
 - a. They are three times less likely to rate their health as good or excellent. This variable is a powerful predictor of mortality.
5. Hispanics have less health insurance.
 - a. They receive fewer checkups;
 - b. They spend more for health care

Conclusions

Trend data show that diabetes and obesity are higher in Hispanics but are increasing in all Arizonans. At the same time, good general health is lower in Hispanics but is decreasing in all Arizonans. It is important to note that participation in health plans are increasing in non-Hispanics while decreasing in Hispanics.

The unemployment rate, lower income levels and lower education levels among the Hispanic population contribute to lower health care access & utilization.

Further policy-making, sustainable community-based prevention research & programs are needed to reduce health disparities in Hispanics.